ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	dormakaba International Holding GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20210195-CBA1-EN
Issue date	07/10/2021
Valid to	06/10/2026

Extension module 90 30 / 30 31

dormakaba

Institut Bauen und Umwelt e.V.

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ECO PLATFORM EPD EN 15804 VERIFIED

General Information

dormakaba

Programme holder
IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-DOR-20210195-CBA1-EN

This declaration is based on the product category rules:
Electronic and physical Access Control Systems, 07.2019
(PCR checked and approved by the SVR)

Issue date
07/10/2021

Valid to
06/10/2026

Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.))

Extension module 90 30 / 90 31

Owner of the declaration
dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit
1 piece of the product: Extension module 90 30 / 90 31

Scope:
This EPD refers to a specific product manufactured by dormakaba. The production site is located in Villingen-Schwenningen (Germany).

The reference year is 2019.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of *EN 15804+A2*. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard *EN 15804* serves as the core PCR
Independent verification of the declaration and data according to *ISO 14025:2010*
☐ internally ☒ externally

Dr.-Ing. Wolfram Trinius
(Independent verifier)

Product

Product description/Product definition
dormakaba extension modules allow a flexible set up of access control systems, providing the number of I/Os exactly required. They connect to a dormakaba access manager 92 00 or to remote readers 91 15 / 91 25. This offers not only “made to measure” access control configurations but also the opportunity to extend or adapt existing systems if requirements change over time.

For the placing on the market in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) the following legal provisions apply:

- *Electromagnetic Compatibility Directive (EMC)*
- *Low Voltage Directive (LVD)*
- *Restriction of Hazardous Substances (RoHS*
- *EN 50581:2012*

The CE-marking takes into account the proof of conformity with the respective harmonized standards based on the legal provisions above. For the application and use the respective national provisions apply.

Application

Flexible access control
Activating door openers, external alarm systems or lift control as well as monitoring sensors/door contacts as part of a comprehensive access control system.

- Extended door control
- Lift control
- Alarm Management
- Window monitoring

Technical Data
The interface device 90 30 / 90 31 has the following technical properties:

Name	Value	Unit
Operating Temperature	0 - 40	°C
Operating Humidity	5 - 85	%
Width Dimension	70	mm

Height Dimension	99	mm
Depth Dimension	45	mm
Weight (without packaging)	0,144	kg
Weight (with packaging)	0,192	kg
Power consumption "on mode"	5	W
Power consumption "idle mode"	2	W

Interface
- proprietary in-line bus to host device

Peripherals Interface
90 30
- 8x relay output, switchover contact 30 V AC/DC; max. 2 A

90 31
- 8x line-monitored digital inputs, max. 5 V DC

Power supply
- via proprietary bus from connected host device

Installation
- Top hat rails: TH35/(7.5/15)
- Class of protection: IP20

The product is not harmonised in accordance with the Construction Product Regulations (CPR) but in accordance with other provisions for harmonisation of the EU. Compliance with the European Union Directive and technical specifications:

- *EN 55032:2015*
- *EN 55024:2016*
- *EN 62368-1:2014*

The product is subject to CE marking according to the relevant harmonization legislation.

In addition, the product also conforms to the following standards:

- *UL 62368-1:2014*
- *CAN/CSA-22.2 No. 62368-1:2014*
- *UL 294 Security Level 1*

Base materials/Ancillary materials

The major material compositions of the product are listed below:

Name	Value	Unit
Electronics	46	%
Paper	31	%
Plastics	23	%
Stainless steel	<0,5	%

The product includes partial articles which contain substances listed in the Candidate List of *REACH* Regulation 1907/2006/EC (date: 08.07.2021) exceeding 0.1 percentage by mass in the alloy: No.

Reference service life
The reference service life of the dormakaba interface device 90 30 / 90 31 is estimated to be 12 years. This number is based on the support and service life and is not an estimated lifetime.

LCA: Calculation rules

Declared Unit
The declared unit is 1 piece of the product: Extension module 90 30 / 90 31.

Declared unit

Name	Value	Unit
Declared unit	1	pce.
Conversion factor to 1 kg (kg per declared unit)	5.208	-
Product weight including packaging	0,192	kg

System boundary
The type of EPD is: cradle to gate with options, modules C1–C4, and module D
(A1–A3 + C + D and additional modules: A4 + A5 + B6)

Production - Module A1-A3
The product stage includes:
— A1, raw material extraction, processing and mechanical treatments, processing of secondary material input (e.g. recycling processes),
— A2, transport to the manufacturer,
— A3, manufacturing and assembly
including provision of all materials, products and energy, as well as waste processing up to the end-of waste state.

Construction stage - Modules A4-A5
The construction process stage includes:
— A4, transport to the building site;
— A5, installation into the building;
including provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues during the construction process stage.

Use stage - Module B6
The use stage related to the operation of the building includes:
— B6, operational energy use

End-of-life stage– Modules C1-C4 and D
The end-of-life stage includes:
— C1, de-construction, demolition:
— C2, transport to waste processing;
— C3, waste processing for reuse, recovery and/or recycling;
— C4, disposal;
including provision and all transport, provision of all materials, products and related energy and water use.

Module D (Benefits and loads beyond the system boundary) includes:
— D, recycling potentials, expressed as net impacts and benefits.

Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

Background database: *GaBi*, SP40.

LCA: Scenarios and additional technical information

Characteristic product properties
Information on biogenic Carbon

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic Carbon Content in product	0.01	kg C
Biogenic Carbon Content in accompanying packaging	0.02	kg C

The following technical scenario information is required for the declared modules.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel per 1 kg (truck)	0.00276	l/100km
Transport distance (truck)	750	km
Capacity utilisation (including empty runs)	51	%
Transport distance (ship)	1000	km

Installation into the building (A5)

Name	Value	Unit
Waste Packaging (paper)	0,05	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	12	a

Operational energy use (B6) and Operational water use (B7)
The use stage is declared for 12 years.

Name	Value	Unit
Energy consumption for 1 year	19,75	kWh
on mode per day	2	h
idle mode per day	22	h
on mode power	5	W
idle mode	2	W
Days per year in use	365	days

End of life (C1-C4)
C1: The product dismantling from the building is done manually without environmental burden.

Name	Value	Unit
Collected separately	0,14485	kg
Recycling	0.089	kg
Energy recovery	0.043	kg
Landfilling	0.012	kg
Transportation to Waste Processing Site	50	km

Region for end of life: Global

Reuse, recovery and/or recycling potentials (D), relevant scenario information
Collection rate is 100%.

LCA: Results

Disclaimer:
EP-freshwater: This indicator has been calculated as “kg P eq” as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	MNR	MNR	MNR	X	ND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece extension module 90 30 / 90 31

Core Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	[kg CO_2-Eq.]	2.38E+0	1.30E-2	6.70E-2	1.67E+2	0.00E+0	4.34E-4	1.12E-1	1.89E-4	-8.80E-2
GWP-fossil	[kg CO_2-Eq.]	2.39E+0	1.30E-2	2.00E-3	1.67E+2	0.00E+0	4.15E-4	1.12E-1	1.87E-4	-8.80E-2
GWP-biogenic	[kg CO_2-Eq.]	-1.68E-2	5.60E-4	6.60E-2	2.82E-1	0.00E+0	1.92E-5	2.60E-6	6.40E-7	-1.72E-4
GWP-luluc	[kg CO_2-Eq.]	3.08E-3	3.01E-7	1.11E-6	1.63E-1	0.00E+0	9.88E-9	6.31E-6	5.39E-7	-7.88E-5
ODP	[kg CFC11-Eq.]	2.19E-10	1.34E-18	1.22E-17	2.26E-12	0.00E+0	4.38E-20	5.63E-17	6.95E-19	-8.09E-16
AP	[mol H^+-Eq.]	1.81E-2	3.54E-5	1.89E-5	1.01E+0	0.00E+0	4.15E-7	1.99E-5	1.34E-6	-4.95E-4
EP-freshwater	[kg P-Eq.]	1.24E-5	2.73E-9	2.38E-9	2.67E-4	0.00E+0	8.88E-11	8.98E-9	3.22E-10	-1.02E-7
EP-marine	[kg N-Eq.]	3.04E-3	9.99E-6	6.82E-6	1.48E-1	0.00E+0	1.32E-7	4.48E-6	3.46E-7	-6.44E-5
EP-terrestrial	[mol N-Eq.]	3.34E-2	1.10E-4	8.51E-5	1.60E+0	0.00E+0	1.47E-6	9.05E-5	3.80E-6	-6.87E-4
POCP	[kg NMVOC-Eq.]	9.11E-3	2.81E-5	1.81E-5	4.30E-1	0.00E+0	3.74E-7	1.24E-5	1.05E-6	-1.98E-4
ADPE	[kg Sb-Eq.]	9.70E-4	3.79E-10	1.92E-10	2.97E-5	0.00E+0	1.25E-11	7.72E-10	1.68E-11	-2.32E-5
ADPF	[MJ]	2.91E+1	1.79E-1	2.10E-2	2.40E+3	0.00E+0	6.00E-3	5.20E-2	2.00E-3	-1.75E+0
WDP	[m^3 world-Eq deprived]	5.00E-1	2.49E-5	8.00E-3	2.95E+1	0.00E+0	8.13E-7	1.10E-2	1.96E-5	-1.10E-2

Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 piece extension module 90 30 / 90 31

Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	[MJ]	8.81E+0	5.66E-4	5.75E-1	7.96E+2	0.00E+0	1.86E-5	1.62E-1	3.22E-4	-2.92E-1
PERM	[MJ]	7.19E-1	0.00E+0	-5.71E-1	0.00E+0	0.00E+0	0.00E+0	-1.48E-1	0.00E+0	0.00E+0
PERT	[MJ]	9.53E+0	5.66E-4	4.00E-3	7.96E+2	0.00E+0	1.86E-5	1.30E-2	3.22E-4	-2.92E-1
PENRE	[MJ]	2.72E+1	1.79E-1	2.10E-2	2.40E+3	0.00E+0	6.00E-3	2.02E+0	2.00E-3	-1.75E+0
PENRM	[MJ]	1.97E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.97E+0	0.00E+0	0.00E+0
PENRT	[MJ]	2.91E+1	1.79E-1	2.10E-2	2.40E+3	0.00E+0	6.00E-3	5.20E-2	2.00E-3	-1.75E+0
SM	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	[m^3]	1.30E-2	1.02E-6	1.97E-4	1.10E+0	0.00E+0	3.33E-8	2.73E-4	6.20E-7	-3.50E-4

Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 piece extension module 90 30 / 90 31

Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	[kg]	1.75E-6	1.74E-11	3.14E-11	1.27E-6	0.00E+0	5.71E-13	1.97E-10	3.75E-11	-2.47E-9
NHWD	[kg]	6.00E-2	1.83E-5	2.00E-3	1.39E+0	0.00E+0	6.02E-7	1.20E-2	1.20E-2	2.00E-3
RWD	[kg]	5.60E-4	1.93E-7	1.12E-6	2.68E-1	0.00E+0	6.32E-9	1.92E-6	2.80E-8	-9.38E-5
CRU	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.30E-2	0.00E+0	0.00E+0
MER	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	[MJ]	1.07E-1	0.00E+0	1.02E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	[MJ]	1.95E-1	0.00E+0	1.85E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components

	for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EEE = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 piece extension module 90 30 / 90 31

Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PM	[Disease Incidence]	1.61E-7	4.61E-10	1.05E-10	8.91E-6	0.00E+0	2.18E-12	2.54E-10	1.66E-11	-4.09E-9
IRP	[kBq U235-Eq.]	5.10E-2	2.76E-5	1.73E-4	4.28E+1	0.00E+0	9.03E-7	1.73E-4	2.88E-6	-1.50E-2
ETP-fw	[CTUe]	1.14E+1	1.27E-1	1.00E-2	8.18E+2	0.00E+0	4.00E-3	1.90E-2	1.00E-3	-4.00E-1
HTP-c	[CTUh]	7.36E-10	2.39E-12	5.35E-13	2.60E-8	0.00E+0	7.85E-14	1.68E-12	2.08E-13	-2.08E-11
HTP-nc	[CTUh]	3.09E-8	1.03E-10	2.32E-11	1.06E-6	0.00E+0	3.36E-12	1.70E-10	2.29E-11	-1.19E-9
SQP	[-]	1.42E+1	4.61E-4	6.00E-3	5.67E+2	0.00E+0	1.51E-5	1.50E-2	5.12E-4	-3.11E-1

Caption	PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator IRP
This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc, SQP
The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

References

Standards

CAN/CSA-22.2 No. 62368-1
CAN/CSA-22.2 No. 62368-1:2014, Audio/video, information and communication technologyequipment — Part 1: Safety requirements.

EN 15804+A2
EN 15804:2019+A2 (in press), Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN 50581
EN 50581:2012, Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

EN 55024
EN 55024:2016, Information technology equipment - Immunity characteristics - Limits and methods of measurement.

EN 55032
EN 55032:2015, Electromagnetic compatibility of multimedia equipment - Emission Requirements.

EN 60529
Degrees of protection provided by enclosures (IP 20).

EN 61000-3-2
EN 61000-3-2:2013, Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase).

EN 61000-3-3
EN 61000-3-3:2013, Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.

EN 62368-1+A11
EN 62368-1:2014+A11:2017, Audio/video, information and communication technology equipment - Part 1: Safety requirements.

Electromagnetic Compatibility Directive
Directive 2014/30/EU of the European Parliamant and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

ISO 14025
DIN EN ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

Low Voltage Directive (LVD)
Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

Radio Equipment Directive (RED)
Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration,

Evaluation, Authorisation and Restriction of Chemicals (REACH).

Restriction of Hazardous Substances (RoHS)
Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), Directive (EU) No 2011/65.

UL 294
UL 294:2013, Standard for Safety Access Control System Unit.

UL 62368-1
UL 62368-1:2014, Standard for Audio/video, information and communication technology equipment - Part 1: Safety requirements.

Further References

IBU 2016
Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021.

GaBi ts software
Sphera Solutions GmbH
Gabi Software System and Database for Life Cycle Engineering 1992-2020
Version 10.0.0.71
University of Stuttgart
Leinfelden-Echterdingen

GaBi ts documentation
GaBi life cycle inventory data documentation (https://www.gabi-software.com/support/gabi/gabi-database-2020-lci-documentation/).

LCA-tool dormakaba
LCA tool, version 1.0.
Developed by Sphera Solutions GmbH.

PCR Part A
PCR – Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Re-port according to EN 15804+A2:2019, Version 1.0, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

PCR Part B
PCR – Part B: Requirements on the EPD for Building Hardware product, version 1.3, Institut Bauen und Umwelt e.V., www.ibu-epd.com, 2019.

Publisher
Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Programme holder
Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Author of the Life Cycle Assessment
Sphera Solutions GmbH
Hauptstraße 111- 113
70771 Leinfelden-Echterdingen
Germany

Tel +49 711 341817-0
Fax +49 711 341817-25
Mail info@sphera.com
Web **www.sphera.com**

Owner of the Declaration
dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Tel +49 2333 793-0
Fax +49 2333 793-4950
Mail info.de@dormakaba.com
Web **www.dormakaba.com**